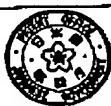


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## PATENT ABSTRACTS OF JAPAN

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(21) Application number: 06146731	(71) Applicant: FUJI HEAVY IND LTD
(22) Date of filing: 28.06.1994	(72) Inventor: OGAWA HIROSHI

### (54) OIL TEMPERATURE REGULATING DEVICE OF DIFFERENTIAL GEAR

#### (57) Abstract:

**PURPOSE:** To effectively regulate the temperature of differential oil by utilizing the temperature of the hydraulic oil of an automatic transmission and to simplify piping.

**CONSTITUTION:** In a vehicle wherein a circuit is designed so that the hydraulic oil A of an automatic transmission 20 enclosed in a transmission case 3 is forced to flow via a lockup-equipped torque converter 10 by a lockup control valve 22 and the front differential unit 40 of a differential gear is enclosed in a closed differential housing 4 with lubricating differential oil B, a heat exchanger 50 is provided at the bottom of the differential housing 4, and the outlet side of an oil cooler 26 is communicated with the heat exchanger 50. A check

valve 33, which opens only when the pressure difference between the outlet and inlet of the cooler is great due to viscosity that depends on the temperature of the hydraulic oil A, is made to bypass and communicate with the oil cooler 26.

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